



MILAGRES COLLEGE

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Mangalore University

BACHELOR OF COMPUTER APPLICATIONS

IV Semester

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| PAPER-XVI | BCA405-ELI-I | COMPUTER ORIENTED NUMERICAL ANALYSIS | 48 hours |
| Theory/Weeks: 4 Hrs Credits: 2 | | | 1 A.C. 20 Exam: 80 12 Hrs. |
| UNIT-I | | | |
| Errors in numerical computation - Errors and their computation Solution of Algebraic and Transcendental equations: Introduction, the Bisection method, the method of False position, the Iterative method, Newton-Raphson method, Ramanujan's method. Interpolation: Introduction Finite differences- forward differences, backward differences, Central differences, Newton's formula for interpolation, Lagrange's interpolation formula. Divided differences- Newton's general interpolation formula | | | |
| UNIT-II | | | 12 Hrs. |
| Least Squares - Introduction, least squares curve fitting procedures - fitting a straight line, non-linear curve fitting, curve fitting by a sum of exponentials Numerical differentiation and integration - Numerical differentiation, Integration- Trapezoidal rule, Simpson's 1/3 rule and Simpson's 3/8 rule | | | |
| UNIT-III | | | 12 Hrs. |
| Matrices and linear system of equations: Basic definitions, matrix operations, transpose of a matrix, the inverse of a matrix, matrix norms. Solution of linear system: Direct methods- Matrix inversion method, Gaussian elimination method, Gauss-Jordan method, LU decomposition. Solution of linear systems- Iterative methods- Gauss-Seidel methods, Jacobi's method. | | | |
| UNIT-IV | | | 12 Hrs. |
| Numerical solution of ordinary differential equations: Solution by Taylor's series, Euler's method, Modified Euler's method, Runge-Kutta methods, Predictor-corrector methods - Adams-Moulton method, Milne's method, Boundary value problems- Finite difference method. | | | |
| Text Book S.S. Sastry, Numerical Analysis, 3 rd edition, PHI publication. | | | |
| Reference Book 1. M. K. Jain, S.R.K. Iyengar & R. K. Jain, Numerical methods for Scientific and Engineering computation, 5 th edition, New Age International publishers. 2. V. Rajaraman, Computer Oriented Numerical Methods, 3 rd Edition, PHI, 2006. | | | |

2013-14 Oct-Nov

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| PAPER-XXII | BCA-506-E2.3 : LAMP TECHNOLOGY | 48 hours |
| Theory/Week: 4 Hrs | | IA: 20 |
| Credits: 2 | | Exam: 80 |
| UNIT-I | | 12 Hrs. |
| Linux Operating System: Linux Operating System Concepts and Architecture; Overview of the Linux Kernel, User Space, Kernel Space; Processes and Daemons, Process Control; Overview of Linux Administration; Linux File system, User, Group and Resource Management; Configuration Files Overview; File system Permissions, Access Permissions and Security, Common Filesystem Commands, Recursion Option in Commands, Find, Grep, Cat, More, Less and Sort Commands. | | |
| UNIT-II | | 12 Hrs. |
| Apache Web Server: Linux distribution Apache Installation; Starting and stopping Web Server Apache Configuration files; Apache Directives – Server Configuration, Directory level configuration; htaccess and <Directory>, Access Control, URL Pathnames, MIME types, CGI files, Automatic directory Indexing, Authentication, Log files; Virtual Hosting – IP Address Virtual Host, Name Based Virtual Host, Dynamic Virtual Hosting; Server Side includes; Apache GUI Configuration Tools & Comanche and linuxconf; Web Server Security – SSL; Apache Web Server Configuration files | | |
| UNIT-III | | 12 Hrs. |
| HTML/XHTML and HTTP: basics review, PHP and the web server Architecture model, Overview of PHP capabilities; CGI vs. Shared Object Model, PHP HTML Embedding Tags and Syntax, simple PHP script example; PHP and HTTP environment variables MYSQL Database Server: Installation- precompiled packages, post installed configuration, post installed troubleshooting; MySQL Administration; Commands – myisamchk, mysql, mysqladmin, mysqlbug, mysqlimport, mysqlshow; Creating users and granting them permissions; Creating databases; Data types; Creating a table; Graphical tools PHP: Obtaining, Installing and configuring PHP; obtaining PHP Source code; Installing PHP from Binary Packages; PHP and security considerations; PHP configuration parameters and the php.ini File; Language Options, Register Globals and Security Resource limits parameters, Error Handling and Logging parameters; Data handling parameters, Paths and Directories, Dynamic Extensions, Checking install with phpinfo function. | | |
| UNIT-IV | | 12 Hrs. |
| PHP Language core: Variables, Constants and Datatypes, and Operators; Decision making, Flow control and loops; Arrays and Array operations, Two dimensional and multidimensional arrays, Strings and strings operations; Functions, Function Declaration and parameter passing; Outputting data, include and require statements; file and Directory Access Operation; Error Handling and Reporting Considerations; Processing HTML From Input from the User ; Creating a Dynamic HTML Form with PHP; Login and Authenticating Users; Using GET, POST, SESSION and COOKIES variable; Session management and Variables; Working with Cookies, Sending Emails; Object Oriented PHP: Classes and Constructors Database Operation With PHP: Built-in Database Function ,Connecting to a MySQL Database; Selecting a Database, Building and Sending the Query to Database; Engine, Retrieving Result & Retrieving, Updating and Inserting Data; Sample Database Routines and Code Segments, Logging Database; Operations for Troubleshooting | | |